Enterprise Resource Planning System

Lecturer: Nargiza Nosirova

What is ERP?

Definition:

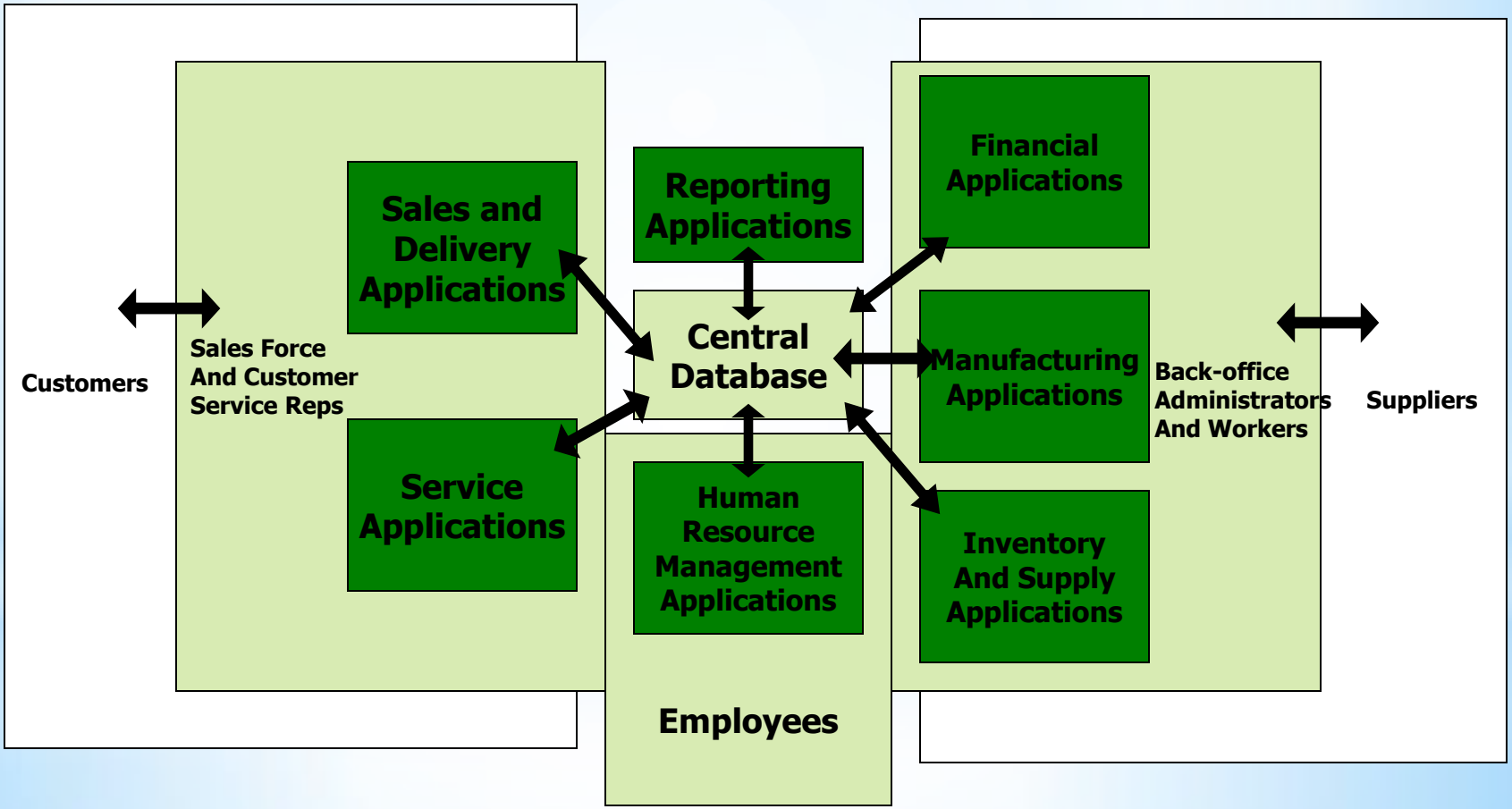
ENTERPRISE RESOURCE PLANNING(ERP) is a cross-functional enterprise system driven by an integrated suite of software modules that supports the basic internal business processes of a company

The practice of consolidating an enterprise's planning, manufacturing, sales and marketing efforts into one management system

Combines all databases across departments into a single database that can be accessed by all employees

ERP automates the tasks involved in performing a business process

How Do ERP Systems Work?



An ERP Example: Before ERP

Accounting Files

Accounting

Customers

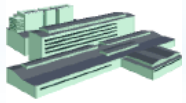
Orders Parts

Checks for Parts

Calls back "Not in stock"

"We ordered the parts"

Invoices accounting



Vendor

Ships parts

Order is placed with Vendor

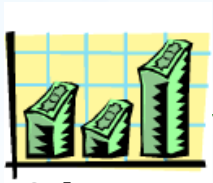
"We Need parts #XX"

"We ordered the parts"

An ERP Example: After ERP

Customers

Orders
Parts



Sales Dept.

Inventory Data
If no parts,
order is placed
through DB

Accounting

Financial Data exchange;
Books invoice against PO

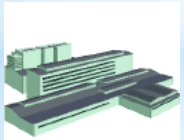
Database

Order is submitted
to Purchasing.
Purchasing record
order in DB

Books inventory
against PO

Purchasing

Order is placed
with Vendor



Vendor

Warehouse

Ships parts

And invoices accounting

Who are the main ERP vendors?

- Baan
- JD Edwards
- Oracle
- PeopleSoft
- SAP

Enterprise Resource Planning (ERP) Systems:

- Software packages that can be used for the core systems necessary to support enterprise systems.
- SCM
- CRM
- E-Collaboration

Vendor/Web Address	ERP Specialties/Characteristics	Target Market
SAP www.sap.com	Customer relationship management, financial management, human resource management, and supply chain management	Large business
Oracle/PeopleSoft www.oracle.com	Financial management, human resource management, and supply chain management	Large business
SSA Global (Baan) www.ssaglobal.com	Customer relationship management, financial management, human resource management, and supply chain management	Large business
Microsoft (Great Plains) www.microsoft.com	Financial management, distribution, manufacturing, project accounting, human resource management, and business analytics	Small-to-medium business

Problems with Decentralized System

- Numerous disparate information system are developed individually over the time.
- Integrating the data becomes time and money consuming.
- Inconsistences and duplication of data.
- High inventory, material and human resource cost.

Benefits of Centralized System	Eliminates the duplication, discontinuity and redundancy in data.
	Provides information across departments in real time.
	Provides control over various business processes.
	Increase Productivity, better inventory management, promotes quality, reduced material cost, boosts profits.
	Better Customers interaction, increased throughput, improves customer services.

ERP Components

Financial Management At the core of ERP are the financial modules, including general ledger, accounts receivable, accounts payable, billing and fixed asset management. If your organization is considering the move to an ERP system to support expansion into global markets, make sure that multiple currencies and languages are supported, as well as regulatory compliance in the U.S. and in foreign countries.

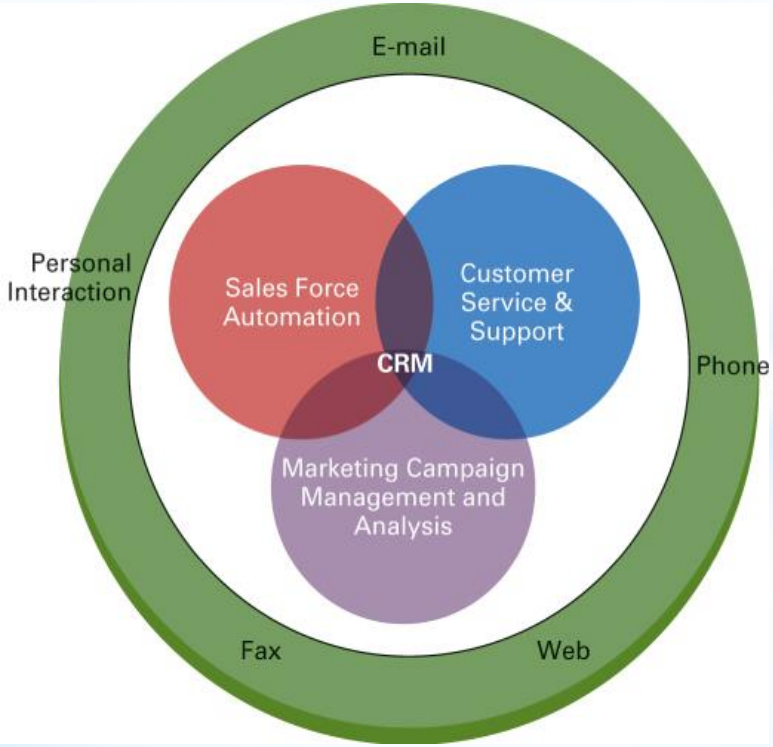
Other functionality in the financial management modules will include budgets, cash-flow, expense and tax reporting. The evaluation team should focus on areas that are most important to support the strategic plans for your organization.

Business Intelligence Business Intelligence (BI) has become a standard component of most ERP packages. In general, BI tools allow users to share and analyze the data collected across the enterprise and centralized in the ERP database. BI can come in the form of dashboards, automated reporting and analysis tools used to monitor the organizational business performance. BI supports informed decision making by everyone, from executives to line managers and accountants.

Supply Chain Management Supply Chain Management (SCM), sometimes referred to as logistics, improves the flow of materials through an organization by managing planning, scheduling, procurement, and fulfillment, to maximize customer satisfaction and profitability. Sub modules in SCM often include production scheduling, demand management, distribution management, inventory management, warehouse management, procurement and order management..

- **Supply chain management (SCM)** – tracks inventory and information among business processes and across companies
- **Supply chain management (SCM) system** – IT system that supports supply chain management
- Just-in-time (JIT) – method for producing or delivering a product or service just at the time the customer wants it
  - Key feature of effective SCM
  - Dell uses JIT to deliver custom computers
- Most supply chains use inter-modal transportation, multiple transportation channels (railway, truck, etc) to move products from origin destination
- This creates supply chain complexities

- ***Customer relationship management (CRM) system*** – uses information about customers to gain insight into their needs, wants, and behaviors in order to serve them better
- Includes ***multi-channel service delivery***, multiple ways in which customers can interact with a business
- Focuses on
  1. Sales force automation
  2. Customer service and support
  3. Marketing campaign management and analysis



- ***Sales force automation (SFA) systems*** – automatically track all the steps in the sales process
  - Sales lead tracking
  - Listing potential customers
  - Market and customer analysis
  - Product configuration
  - Getting repeat customers

Opportunities of CRM

- Business strategy
  - Differentiation and focus
  - Growing the organization
- Classic goals
  - Treating customers better
  - Understanding their needs and wants
  - Tailoring offerings
  - Providing “delightful” experiences


Financial
Accounts Receivable
Accounts Payable
Cash Management
Forecasting
General Ledger
Profitability Analysis
Sales and Marketing
Order Management
Sales Management
Sales Planning
Pricing
ERP
Operations and Logistics
Inventory Management
Material Requirements Planning
Production Planning
Project Management
Purchasing
Shipping
Human Resources
Payroll
Personnel Planning
Travel Expenses
Training

Human Resource Management Human resource management ERP modules should enhance the employee experience – from initial recruitment to time tracking. Â Sub modules can include payroll, performance management, time tracking, benefits, compensation and workforce planning. Self-service tools that allow managers and employees to enter time and attendance, choose benefits and manage PTO are available in many ERP solutions.

Manufacturing and Logistics: A group of applications for planning production, taking orders and delivering products to the customer. Examples:

- Production planning
- Materials management
- Order entry and processing
- Warehouse management

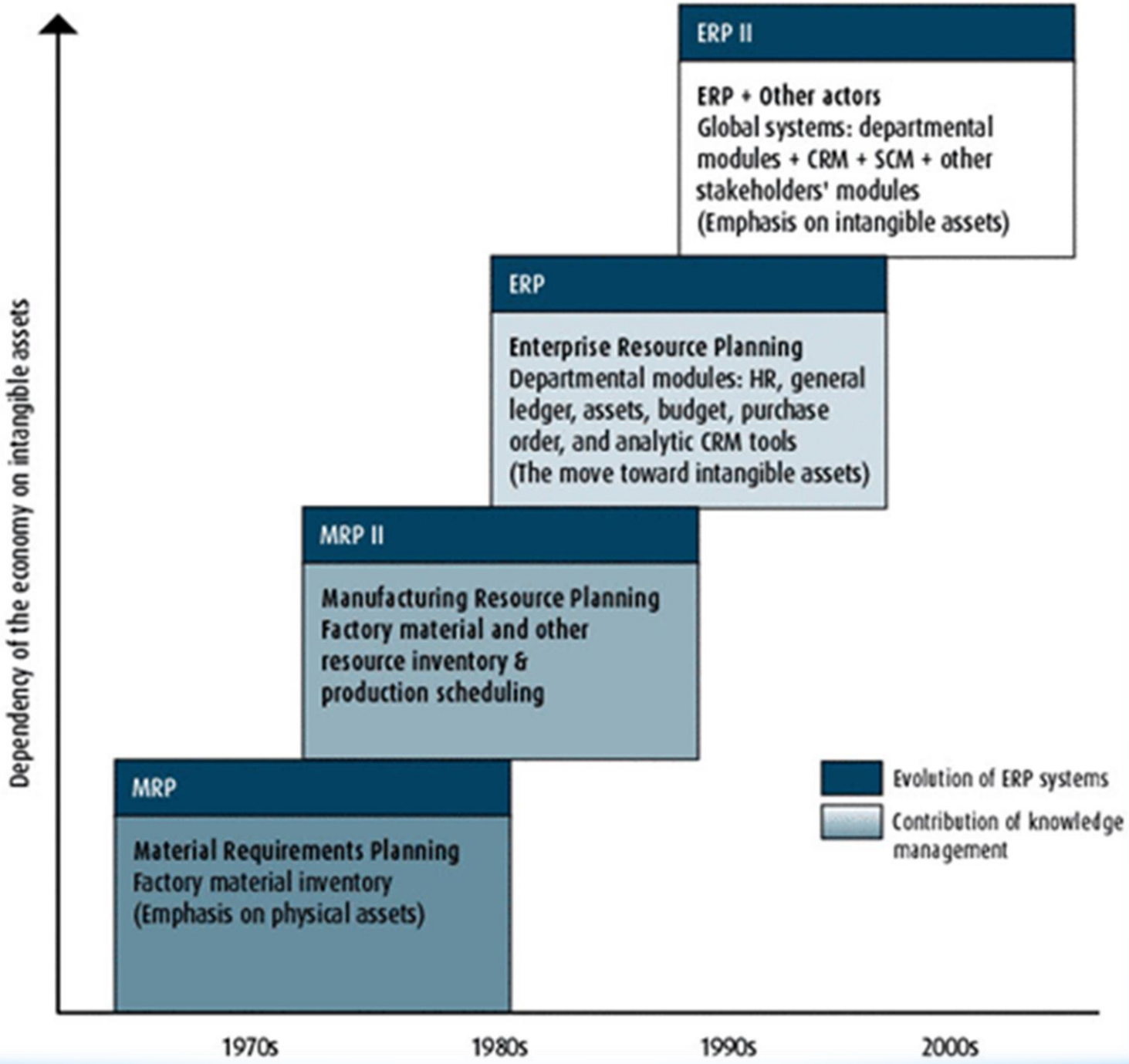
Integration Key to the value of an ERP package is the integration between modules, so that all of the core business functions are connected. Information should flow across the organization so that BI reports on organization-wide results.

ERP Evolution

Inventory Management & Control-1960's Inventory Management and control is the combination of information technology and business processes of maintaining the appropriate level of stock in a warehouse. The activities of inventory management include identifying inventory requirements, setting targets, providing replenishment techniques and options, monitoring item usages, reconciling the inventory balances, and reporting inventory status.

Material Requirement Planning (MRP)-1970's Materials Requirement Planning (MRP) utilizes software applications for scheduling production processes. MRP generates schedules for the operations and raw material purchases based on the production requirements of finished goods, the structure of the production system, the current inventories levels and the lot sizing procedure for each operation

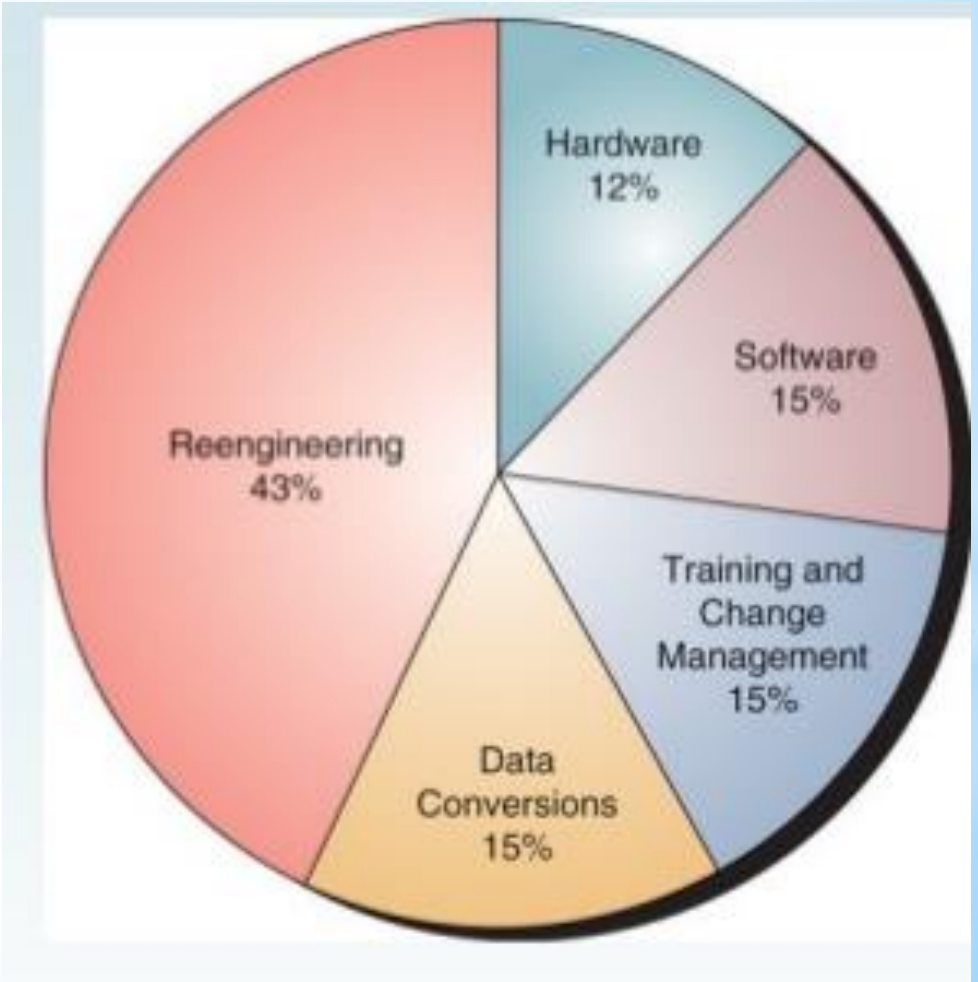
Manufacturing Requirements Planning (MRP II)-1980's Manufacturing Requirements Planning or MRP utilizes software applications for coordinating manufacturing processes, from product planning, parts purchasing, inventory control to product distribution.


ERP II
ERP + Other actors
Global systems: departmental modules + CRM + SCM + other stakeholders' modules
(Emphasis on intangible assets)
ERP
Enterprise Resource Planning
Departmental modules: HR, general ledger, assets, budget, purchase order, and analytic CRM tools
(The move toward intangible assets)
MRP II
Manufacturing Resource Planning
Factory material and other resource inventory & production scheduling
MRP
Material Requirements Planning
Factory material inventory
(Emphasis on physical assets)
Dependency of the economy on intangible assets
1970s
1980s
1990s
2000s
Evolution of ERP systems
Contribution of knowledge management

Enterprise Resource Planning (ERP)-1990's

Enterprise Resource Planning or ERP uses multi-module application software for improving the performance of the internal business processes. ERP systems often integrates business activities across functional departments, from product planning, parts purchasing, inventory control, product distribution, fulfillment, to order tracking. ERP software systems may include application modules for supporting marketing, finance, accounting and human resources

Costs of ERP



ERP Project and Time

Real transformational ERP efforts will usually run between 1 to 3 years, on average.

Short implementations (3 to 6 months):

- small companies,
- implementation limited to a small area of the company, or
- the company only used the financial pieces of the ERP system.

The important thing is not to focus on how long it will take but to understand why you need ERP and how you will use it to improve your business

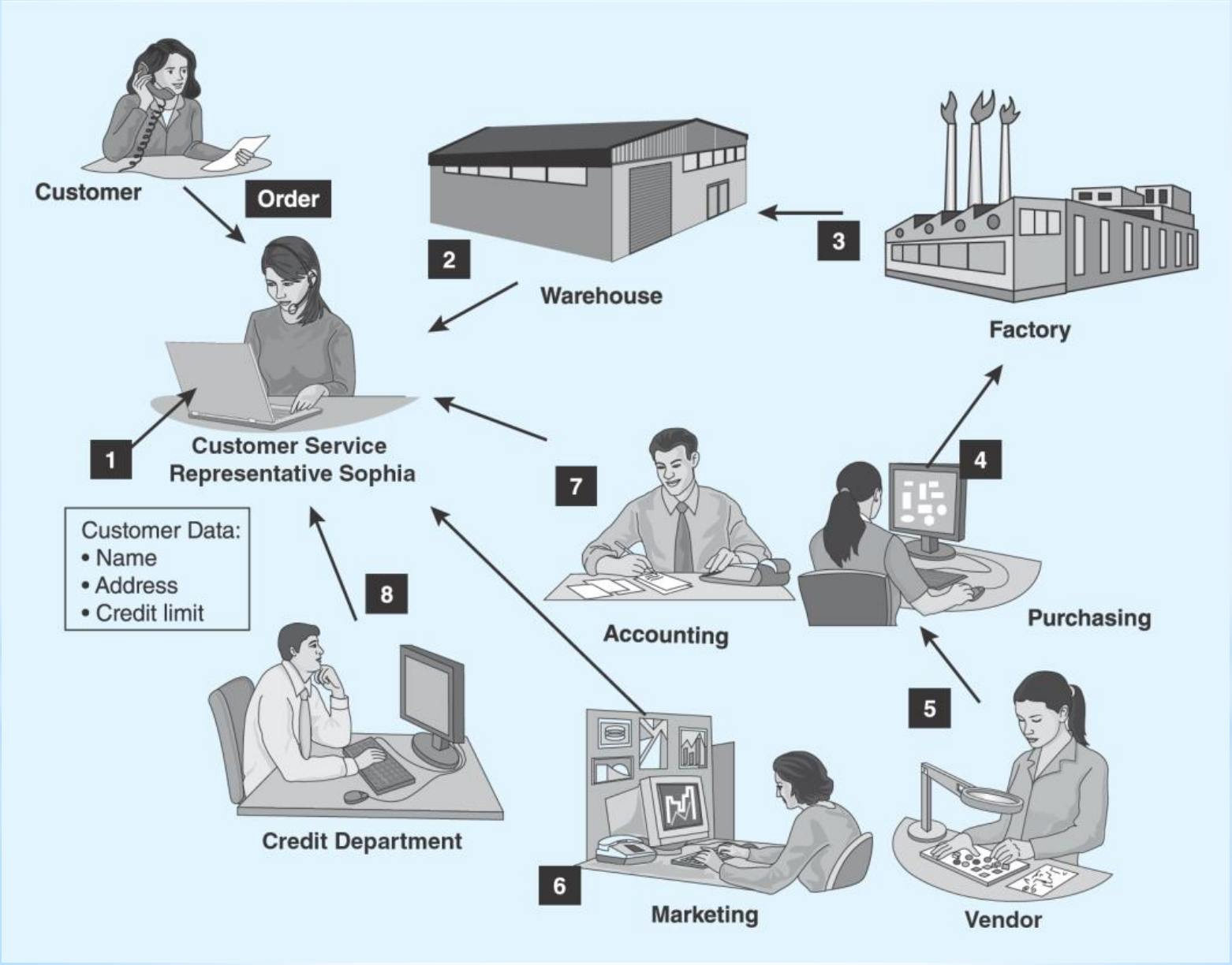
The benefits of a properly selected and implemented ERP system can be significant. An average, 25 to 30% reduction on inventory costs; 25% reduction on raw material costs. Lead-time for customers, production time, and production costs can be reduced. BUT cost of implementing can be quite high and risks are great.

Benefits of ERP Systems

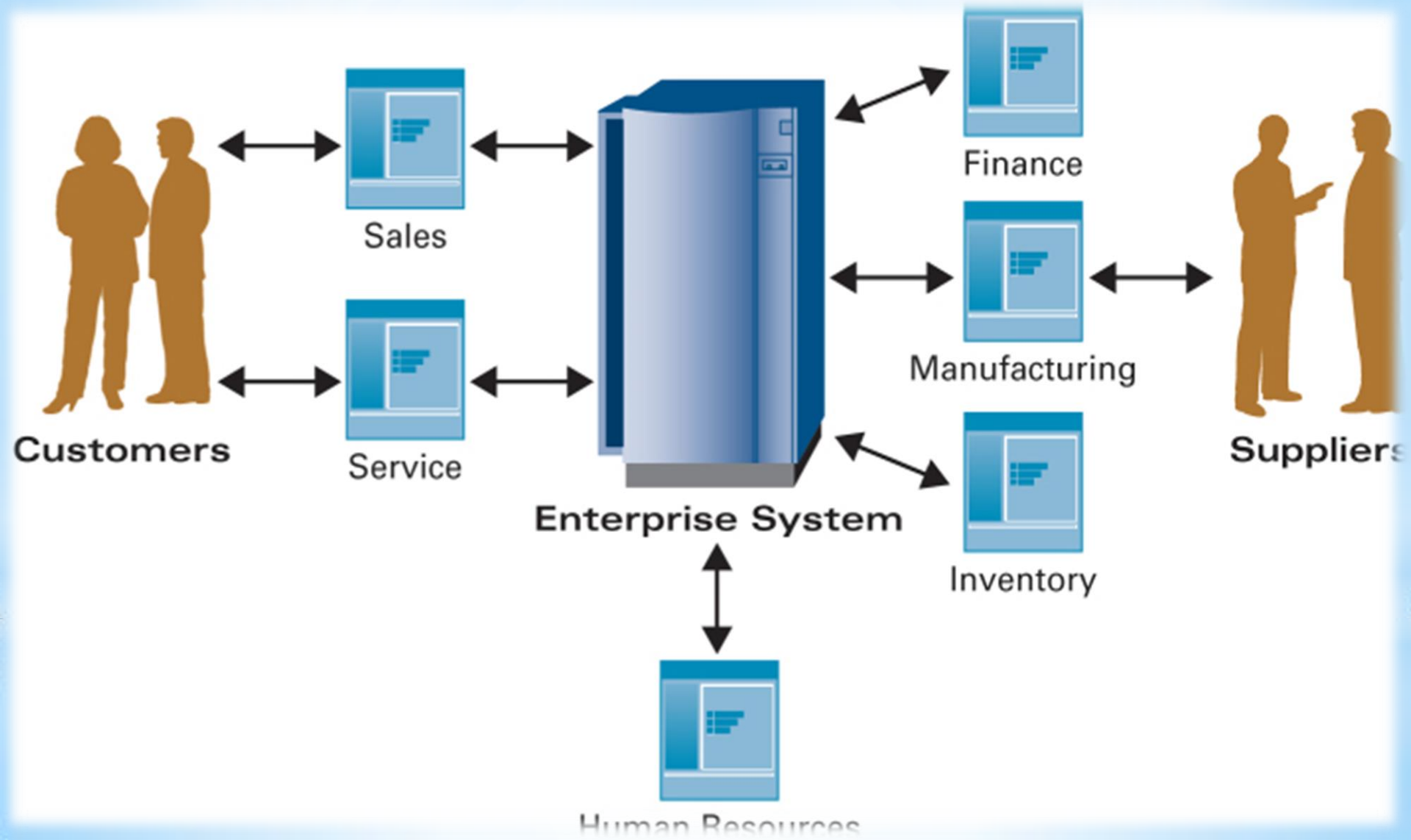
- Improving integration, flexibility
- Fewer errors
- Improved speed and efficiency
- More complete access to information
- Lower total costs in the complete supply chain
- Shorten throughput times
- Sustained involvement and commitment of the top management
- Reduce stock to a minimum
- Enlarge product assortment
- Improve product quality
- Provide more reliable delivery dates and higher service to the customer
- Efficiently coordinate global demand, supply and production


Supply Chain &
Vendor Management
Customer
Relationship
Management
Enterprise
Resource
Planning
Projects
And
HR Management
Finance
and Accounting
Manufacturing
Production & Service
Management & Delivery

Inefficient Customer Service



ERP Integrates Everything



Conclusion

This study thus mainly helps in providing benefits of ERP on an organization. Thus the main objectives have been tried to describe and has been concluded that it is necessary to adopt an ERP system first to serve as a corporate framework of information before the deployment of other corporate information systems which could help the firm gain desired effect. It is also observed that ERP systems could be successful and become the backbone of company operations in new and future economy. Although in order to measure ERP benefits and SCM competencies more measurements for firm competencies needs to be drawn from the ERP systems.

Thank you for your attention !